UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/458,322	12/10/1999	STEPHEN J. ZACK	533/198	8722

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ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 12/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
 after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
 earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 June 2003*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
 closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *32-44* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *32-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☒ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
 application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet.
 37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific
 reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)

3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

2.   Claim 36 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

Claim 36 recites the limitation "said non-content control data" in line 3. There is

insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by
> another filed in the United States before the invention by the applicant for patent or (2) a patent
> granted on an application for patent by another filed in the United States before the invention by the
> applicant for patent, except that an international application filed under the treaty defined in section
> 351(a) shall have the effects for purposes of this subsection of an application filed in the United States
> only if the international application designated the United States and was published under Article 21(2)
> of such treaty in the English language.

4.   Claims 32- 33, 36-41 and 43-44 are rejected under 35 U.S.C. 102(e) as being

anticipated by Adams (US 6,044,396).

Regarding claim 32, Adams teaches an information distribution system comprising

server equipment (server source 115) for providing both content and non-content data

(video data and application data) to subscriber equipment (terminal nodes 105), the

server equipment comprising:

a multiplex switch for multiplexing a plurality of formatted content from server modules

to produce an output stream streams (video streams from media servers 200) that is

adapted for transport via a communication channel, wherein the multiplexing of the

formatted content streams is statistically performed; wherein the multiplex switch is

further for formatting non-content data (application data, application programs and

control information) and for selectively multiplexing formatted non-content data into the

bandwidth availability basis that is predicted based on the multiplexing of the formatted

content streams (statistical multiplexer 208 multiplexes a plurality of encoded video

streams from media servers 200 and forwards the video streams to modulator 210 for

transmission over a channel in the network 110; The data stored in each buffer slot is

preferably in the form of an MPEG-2 transport packet; the statistical multiplexer also

determines if video buffers 400 in media servers 200 are empty, the selector passes

data from the application buffer 402 to the output buffer 406 for transmission over a

channel in the network 110 – see figures 2, 4 and col. 3, line 40+).

Regarding claim 33, Adams teaches the multiplex switch includes a buffer for storing

non-content data and a switch controller for determining a bandwidth utilization level of

the multiplex switch, the switch controller further for causing at least a portion of the

non-content data in the buffer to be multiplexed into the output stream when the

bandwidth utilization level falls below a threshold utilization bandwidth level (statistical

multiplexer comprises application buffer 402 for receiving the application data stream

from the network controller 204, the selector 404 couples to video buffers 400 and

application buffer 402 and decides which data stream is to be given access to a channel

of the network 110. The video streams are given higher priority than the application

data. The selector allocates the application data stream to a low priority access to the

network. Therefore, if and when all video buffers 400 are empty, the selector 404

passes data from the application buffer 402 to the output buffer 406 for transmission on

the channel of the network 110 – see figure 4 and col. 4, line 35+).

Regarding claim 36, Adams teaches the non-content data comprises control data

(control information) and non-control data (application data and application programs),

and the multiplex switch preferentially multiplexes the non-content control data (see col.

3, lines 40-52, col. 4, lines 57-64, col. 6, lines 61-67).

Regarding claim 37, Adams teaches the non-content data comprises control data

(control information) and non-control data (application data and application programs),

and the multiplex switch preferentially multiplexes the control data (see col. 3, lines 40-52, col. 4, lines 57-64, col. 6, lines 61-67).

Regarding claim 38, Adams teaches the content data includes MPEG data (see col. 4, lines 48-49; col. 5, lines 14-45).

Regarding claim 39, Adams teaches the non-content data includes Internet protocol data (see col. 3, lines 43-44).

Regarding claim 40, the limitations of the method as claimed correspond to the limitations of the system as claimed in claim 32 and are analyzed as discussed with respect to the rejection of claim 32.

Regarding claim 41, Adams teaches storing non-content data until bandwidth availability enables multiplexing of the stored non-content data (application data is stored in application buffer 402. If and when all video buffers 400 are empty, the selector 404 passes data from the application buffer 402 to the output buffer and the application data, application program, control information are transmitted in waste bandwidth – see col. 5, lines 1-8, col. 6, lines 63-67).

Regarding claim 43, Adams teaches the output stream in an MPEG data stream (col. 4, lines 48-49; col. 5, lines 13-14).

Regarding claim 44, Adams teaches receiving the non-content data in an Internet

protocol format (col. 3, lines 43-44).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claim 34-35 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable

Adams (US 6,044,396).

Regarding claim 34, Adams teaches a system as discussed in the rejection of claim 33.

Adams further discloses multiplexer 208 selects the packets or ATM cells to be

forwarded to a modulator 210 (col. 3, lines 63-64); real time constraints on the display of

video data; and the selector 404 selects data from the video buffers 400 in round robin

fashion to ensure fair allocation to the network 110 (col. 4, line 54+). However, Adams

does not specifically disclose the threshold bandwidth utilization level comprises a

utilization level sufficient to process a single time extent, wherein the content streams

are divided into a plurality of respective time extents. It is obvious to one of ordinary skill

in the art that the threshold bandwidth utilization level comprises a utilization level

sufficient to process a single time extent, wherein the content streams are divided into a plurality of respective time extents in order to reduce delay in real time data transmission thereby improve efficiency in quality of service.

Regarding claim 35, Adams teaches a system as discussed in the rejection of claim 33. Adams further discloses multiplexer 208 selects the packets or ATM cells to be forwarded to a modulator 210 (col. 3, lines 63-64); real time constraints on the display of video data; and the selector 404 selects data from the video buffers 400 in round robin fashion to ensure fair allocation to the network 110 (col. 4, line 54+). However, Adams does not specifically disclose each of the content streams is divided into a plurality of respective time extents, and the multiplex switch can multiplex a predetermined number of time extents into the output stream. It is obvious to one of ordinary skill in the art that each of the content streams is divided into a plurality of respective time extents, and the multiplex switch can multiplex a predetermined number of time extents into the output stream in order to improve efficiency in data transmission.

Regarding claim 42, the limitations of the method as claimed correspond to the limitations of the system as claimed in claim 35 and are analyzed as discussed with respect to the rejection of claim 35.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Rao (US 5,506,844) teaches method for configuring a statistical multiplexer to

dynamically allocate communication channel bandwidth.

Huang et al. (US 6,516,002) teaches apparatus for using a receiver model to multiplex

variable rate bit streams having timing constraints.

8.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Son P Huynh whose telephone number is 703-305-

1889. The examiner can normally be reached on 8:00-5:30.

9.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Andrew Faile can be reached on 703-305-4380. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9314.

10.   Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the customer service office whose telephone number

is 703-306-0377.

Son P. Huynh
December 2, 2003

ANDREW FAILE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600